# U. S. DEPARTMENT OF AGRICULTURE
# FOREST SERVICE
# FOREST PRODUCTS LABORATORY
# MADISON, WIS.

*In Cooperation with the University of Wisconsin*

## LIST OF PUBLICATIONS ON

# PACKAGING

## (BOXES, CRATES, CONTAINERS, AND PALLETS)



This list includes publications that present the results of research by the Forest Products Laboratory in this particular field of wood products research.

Single copies of the various items may be obtained free upon request from the Director, Forest Products Laboratory, Forest Service, U.S. Department of Agriculture, Post Office Box 5130, Madison, Wis. 53705. Classroom quantities are not available because of limited printing and storage facilities.

| Title | Author | Publication and date |
|---|---|---|
| | WOOD BOXES AND CRATES | |
| Wood crate design manual. | Anderson, L. O. & Heebink, T. B. | USDA Handb. No. 252, 131 pp. 1964. |
| Properties of ordinary wood compared with plywood. | Forest Products Laboratory | FPL Tech. Note 131. Rev. 1962. |
| | NAILED-WOOD BOXES | |
| Preservative treatments for protecting wood boxes. | Verrall, A. F. & Scheffer, T. C. | USDA Forest Serv. Res. Pap. FPL 106. 1969. |

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April 1974

| Title | Author | Publication and date |
|---|---|---|
| **CORRUGATED AND SOLID FIBERBOARD BOXES** | | |
| Vibration transmissibility characteristics of corrugated fiberboard. | Godshall, W. D. | USDA Forest Serv. Res. Pap. FPL 211. 1973. |
| Shock cushioning by corrugated fiberboard pads to centrally applied loading. | Stern, R. K. & Jordan, C. A. | USDA Forest Serv. Res. Pap. FPL 184. 1973. |
| Method for measuring and controlling web tension of corrugating medium during single facing. | Godshall, W. D. & Koning, J. W., Jr. | USDA Forest Serv. Res. Note FPL-0219. 1972. |
| Development of basic information for the design of paper shipping sacks. | Chern, J. & Kuenzi, E. W. | Tappi 55(10): 1477-1481. Oct. 1972. |
| Improving comparability of paperboard test results: Using flexible and rigid type testing machines. | Koning, J. W., Jr., Kuenzi, E. W., Moody, R. C., & Godshall, W. D. | Tappi 55(5): 757-760. May 1972. |
| How variations in corrugated-pad composition affect cushioning. | Stern, R. K. | Packaging Eng. 1971. |
| Method for recording machine speed at which corrugating medium is fluted. | Koning, J. W., Jr. & Godshall, W. D. | USDA Forest Serv. Res. Note FPL-0216. 1971. |
| Frequency response, damping, and transmissibility characteristics of top-loaded corrugated containers. | Godshall, W. D. | USDA Forest Serv. Res. Pap. FPL 160. 1971. |
| Measuring linerboard thickness and flute height of corrugated fiberboard. | Koning, J. W., Jr. | Tappi 54(2): 236-238. Feb. 1971. |
| Effects of relative humidity and temperature on tensile stress-strain properties of kraft linerboard. | Benson, R. E. | Tappi 54(5): 699-703. May 1971. |

| Title | Author | Publication and date |
|---|---|---|
| Predicting flexural stiffness of corrugated fiberboard. | Koning, J. W., Jr. & Moody, R. C. | Tappi 54(11): 1879-1881. Nov. 1971. |
| Hygroexpansivity of corrugated. | Koning, J. W. | App. Tech. Art. Pap. Pack.: 50,51. Oct. 1970. |
| Effect of glue skips on corrugated fiberboard container compressive strength. | Koning, J. W., Jr. & Moody, R. C. | Tappi 52(10): 1910-1915. Oct. 1969. |
| Testing corrugated corner pads. | Jordan, C. A. | Modern Pack. Sept. 1969. |
| Now you can easily check your corrugated box adhesive's water resistance. | Koning, J. W., Jr. | Package Eng. Aug. 1969. |
| Testing corrugated corner pads. | Southwick, C. A., Jr. & Winship, J. T. | Modern Pack. Sept. 1969. |
| Flat-crush cushioning capability of corrugated fiberboard pads under repeated loading. | Stern, R. K. | U.S. Forest Serv. Res. Note FPL-0183. 1968. |
| Tests show corrugated pads' performance as cushioning. | Stern, R. K. | Package Eng. Feb. 1968. |
| Effects of vertical dynamic loading on corrugated fiberboard containers. | Godshall, W. D. | U.S. Forest Serv. Res. Pap. FPL 94. 1968. |
| Effectiveness of chemical treatments in improving the wet compressive strength of container-grade solid fiberboard. | Moody, R. C. | U.S. Forest Serv. Res. Note FPL-0166. 1967. |
| Latest developments in testing corrugated boxes in the United States. | Kellicutt, K. Q. | Presented at the 9th Cong. Fed. of European Fiberboard Box Manufacturers, 1966, Vienna, Austria. |
| Slip pads, vertical alignment increase stacking strength 65%. | Koning, J. W., Jr. & Moody, R. C. | Boxboard Containers 85(888): 56-59. Nov. 1966. |
| How dead load, downward creep influence corrugated box design. | Moody, R. C. & Skidmore, K. E. | Package Eng. 11(8): 75-81. Aug. 1966. |

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|---|---|---|
| Effect of loading rate on the edgewise compressive strength of corrugated fiberboard. | Moody, R. C. & Koning, J. W., Jr. | U.S. Forest Serv. Res. Note FPL-0121. 1966. |
| Fiberneer...development, production, and evaluation. | Kurtenacker, R. S. | U.S. Forest Serv. Res. Pap. FPL 52. 1966. |
| Edgewise compressive strength of corrugated fiberboard as determined by local instability. | Moody, R. C. | U.S. Forest Serv. Pap. Pap. FPL 46. 1965. |
| Comparison of two specimen shapes for short column test of corrugated fiberboard. | Koning, J. W., Jr. | U.S. Forest Serv. Res. Note FPL-0109. 1965. |
| Dynamic tension testing equipment for paperboard and corrugated fiberboard. | Godshall, W. D. | U.S. Forest Serv. Res. Note FPL-081. 1965. |
| Phenolic resin treatment improves fiberboard compressive strength. | Koning, J. W., Jr. & Fahey, D. J. | Package Eng. 10(10): 130-139 Oct. 1965. |
| A short column crush test of corrugated fiberboard. | Koning, J. W., Jr. | Tappi 47(3): 134-137. Mar. 1964. |
| | PALLETS | |
| Adhesives for pallets. | Kurtenacker, R. S. | USDA Forest Serv. Res. Pap. FPL 209. 1973. |
| Evaluation of methods of assembling pallets. | Kurtenacker, R. S. | USDA Forest Serv. Res. Pap. FPL 213. 1973. |
| Appalachian hardwoods for pallets: Correlation between services and laboratory testing. | Stern, R. K. & Dunmire, D. E. | USDA Forest Serv. Res. Pap. FPL 169, 1972. |
| Rapid production of pallet deckboards from low-grade logs. | Hann, R. W., Jokerst, R. W., Kurtenacker, R. S., Peters, C. C., & Tschernitz, J. L. | USDA Forest Serv. Res. Pap. FPL 154, 16 pp. 1971. |

| Title | Author | Publication and date |
|---|---|---|
| Wood pallet manufacturing. | Forest Products Laboratory. | USDA Forest Serv. Res. Note FPL-0213. 1971. |
| Appalachian hardwoods for pallets: Effect of fabrication variables and lumber characteristics on performance. | Kurtenacker, R. S. | U.S. Forest Serv. Res. Pap. FPL 112. |
| Appalachian hardwoods for pallets --a laboratory evaluation. | Kurtenacker, R. S., Heebink, T. B., & Dunmire, D. E. | U.S. Forest Serv. Res. Pap. FPL 76. 1967. |
| Some observations of plywood pallets in use. | Heebink, T. B. | U.S. Forest Serv. Res. Note FPL-096. 1965. |
| Suitability of seven West Coast species for pallets. | Heebink, T. B. | U.S. Forest Serv. Res. Pap. 22. 1965. |
| | FASTENERS | |
| Performance of nailed cleats in blocking and bracing applications. | Kurtenacker, R. S. & Godshall, W. D. | U.S. Forest Serv. Res. Note FPL-0200. 1968. |
| Effects of various preservatives of field boxes on nail holding. | Scholten, John A. | U.S. Forest Serv. Res. Pap. FPL 42. 1965. |
| Nail withdrawal resistance of American woods. | Forest Products Laboratory | U.S. Forest Serv. Res. Note FPL-093. 1965. |
| Performance of container fasteners subjected to static and dynamic withdrawal. | Kurtenacker, R. S. | U.S. Forest Serv. Res. Pap. FPL 29. 1965. |
| Strength of wood joints made with nails, staples, or screws. | Scholten, John A. | U.S. Forest Serv. Res. Note FPL-0100. 1965. |
| Adhesives for assembly of light-weight wood containers. | Kurtenacker, R. S. | U.S. Forest Serv. Res. Note FPL-054. 1964. |
| Nailing dense hardwoods. | Forest Products Laboratory | U.S. Forest Serv. Res. Note FPL-037. 1964. |

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| **CUSHIONING MATERIALS** | | |
| Cushioning performance of multi-layer corrugated fiberboard pads loaded at center only. | Jordan, C. A. | U.S. Forest Serv. Res. Pap. FPL 136. 1970. |
| Effect of atmospheric moisture content upon shock cushioning properties of corrugated fiberboard pads. | Stern, R. K. | U.S. Forest Serv. Res. Pap. FPL 129. 1970. |
| Container effects in cushioned packages: Urethane foam corner pads. | Jordan, C. A. | U.S. Forest Serv. Res. Pap. FPL 109. 1969. |
| Cushioning properties of five-layer corrugated fiberboard pads: Load applied to central area only. | Jordan, C. A. | U.S. Forest Serv. Res. Pap. FPL 116. 1969. |
| FPL dynamic compression testing equipment for testing package cushioning material. | Stern, R. K. | U.S. Forest Serv. Res. Note FPL-067. 1964. |
| **TESTING OF CONTAINERS AND PACKAGING MATERIALS** | | |
| Tests give film barriers the air show how well they do. | Mohaupt, A. A. | Package Eng. 13(12): 80-84. Dec. 1968. |
| New tests probe cushioning properties of corrugated board. | Jordan, C. A. & Stern, R. K. | Package Eng. 10(12): 76-94. Dec. 1965. |

For information relative to methods of testing packages, containers, or packaging material, consult

American Society for Testing and Materials
1916 Race Street
Philadelphia, Pa. 19103

Technical Association of the Pulp & Paper Industry
One Dunwoody Park
Atlanta, Ga. 30341

Federal Standard No. 101, "Preservation, Packaging and Packing Materials Test Procedures," may be purchased from General Services Administration, Business Service Center, Washington, D.C. 20405.



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